REMARKS

Applicants respectfully request further examination and reconsideration in view of the above amendments and the comments set forth fully below. Claims 24-26 and 35-42 were pending. Within the Office Action, Claims 24-26 and 35-42 have been rejected. Claims 24-26 and 35-42 are now pending.

Objections To The Drawings

Within the Office Action, the drawings have been objected to under 37 CFR 1.83(a) for not showing every feature of the invention specified in the claims. Specifically, it is stated within the Office Action that the second waste tube and the drain seal coupled to the waste tube for creating a seal between the first waste tube and one of the first and second drain must be shown or the features canceled from the claims. The applicants respectfully disagree. The waste tube system is shown in Figures 4, 7 and 9. While a single waste tube system is shown in the figures, it is stated within the specification that "[p]referably, the synthesizer 100 includes two waste tube systems 430 for flushing two banks of vials simultaneously. Alternatively, any appropriate number of waste tube systems can be included within the synthesizer 100 for selectively flushing banks of vials." [Specification, page 13, lines 17-19] With reference to this portion of the specification, the second waste tube system, as claimed within the claims, is the same as the first waste tube system. This portion of the specification refers to "two waste tube systems 430." Accordingly, the waste tube system 430 which is shown in the figures, is representative of both the first waste tube and the second waste tube.

The drain seal is illustrated in Figure 9 by the element 940 (540 in the originally submitted drawing, 940 in the amended drawing). As stated within the specification, "[t]he mobile tube 920 includes a drain seal 940 positioned on top of the mobile tube 920." [Specification, page 13, lines 5-6] For at least these reasons, the second waste tube and the drain seal are shown in the drawings. Therefore, it is respectfully requested that this objection to the drawings be withdrawn.

Within the Office Action, the drawings have been objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character 520 has been used to designate mobile tube, waste tube and holes. By the above amendment, Figure 9 and the accompanying text on page 13

of the specification, have been amended to change the reference character 520 in Figure 9 to the reference character 920. Therefore, it is respectfully requested that this objection to the drawings be withdrawn.

Within the Office Action, the drawings have been objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character 530 has been used to designate both gas fitting and waste tube system. By the above amendment, Figure 9 and the accompanying text on page 13 of the specification, have been amended to change the reference character 530 in Figure 9 to the reference character 930. Therefore, it is respectfully requested that this objection to the drawings be withdrawn.

Rejections Under 35 U.S.C. § 112

Within the Office Action, Claims 24-26 and 35-42 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. There are no specific occurrences cited within the Office Action to support this rejection. All that is stated within the Office Action, is that the connection, interrelationship and configuration of the structural elements and their function with respect to each other are not clearly described in the specification. Without specifically cited occurrences, the applicants cannot respond to such a rejection. Further, the applicants submit that the claims do comply with the written description requirement. Therefore, it is respectfully requested that the rejection of Claims 27-30 and 35 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Rejections Under 35 U.S.C. § 102

Within the Office Action, Claims 24-26 and 35-42 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,844,306 to Hill (hereinafter "Hill"). The applicants respectfully disagree. Hill teaches a gas supply system for supplying gas or compressed air. Hill teaches that the gas is supplied from large capacity banks of storage containers having different pressure capacities. [Hill, Abstract] Hill teaches that the gas is withdrawn from the lower pressure storage bank first and only if necessary from a higher pressure bank. [Hill, Abstract] Hill teaches that the outlet of the pressure regulator 46 is connected through hose shut-off valves 49 and 53 and check valves 50 and 54 to fill hoses 51 and 55, respectively. [Hill, col. 3, lines 19-28] Hill also teaches that the fill hoses 51 and 55 may be detachably connected to tanks to be filled. [Hill, col. 3, lines 19-28] Hill does not teach a purging system for use with a synthesizer. Hill does not teach a system which includes a first and second

bank of vials. Hill does not teach a waste tube capable of engaging with a first drain and a second drain. The fill hoses 51 and 55 taught by Hill are not waste tubes.

In contrast to the teachings of Hill, the multi-well rotary synthesizer includes a controller, a plurality of precision fit vials circularly arranged in multiple banks on a cartridge, a drain corresponding to each bank of vials, a chamber bowl, a plurality of valves for delivering reagents to selective vials and a waste tube system for purging material from the vials. [Specification, p. 3, lines 8-11] The banks of vials can also be selectively purged, allowing the banks of vials to be used to synthesize different polymer chains. [Specification, p. 3, lines 8-11] The plurality of vials are held within the cartridge and divided among individual banks. [Specification, page 3, lines 15-16] Each individual bank of vials has a corresponding drain. [Specification, page 3, line 16] The reagent solution is purged from a bank of vials by rotating the cartridge until the corresponding drain is positioned above the waste tube system and coupling the waste tube system to the corresponding drain. As discussed above, Hill does not teach a purging system for use with a synthesizer. As also discussed above, Hill does not teach a system which includes a first and second bank of vials. Further, Hill does not teach a waste tube capable of engaging with a first drain and a second drain.

The independent Claim 24 is directed to a purging system configured for use with a synthesizer containing a first bank of vials and a second bank of vials wherein the first bank of vials has a first drain and the second bank of vials has a second drain. The purging system of Claim 24 comprises a pressurizing system for creating a pressure differential within a selective one of the first bank of vials and the second bank of vials and a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. As discussed above, Hill does not teach a purging system configured for use with a synthesizer. As also discussed above, Hill does not teach a system which includes a first and second bank of vials. Further, Hill does not teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. For at least these reasons, the independent Claim 24 is allowable over the teachings of Hill.

Claims 25 and 26 are both dependent on the independent Claim 24. As described above, the independent Claim 24 is allowable over the teachings of Hill. Accordingly, the Claims 25 and 26 are both also allowable as being dependent on an allowable base claim.

The independent Claim 35 is directed to a purging system configured for use with a synthesizer containing a first bank of vials and a second bank of vials wherein the first bank of

vials has a first drain and the second bank of vials has a second drain. The purging system of Claim 35 comprises means for generating a pressure differential within a selective one of the first bank of vials and the second bank of vials and means for purging for engaging a selective one of the first drain for purging material from the first bank of vials and the second drain to purge material from the second bank of vials. As discussed above, Hill does not teach a purging system configured for use with a synthesizer. As also discussed above, Hill does not teach a system which includes a first and second bank of vials. Further, Hill does not teach a means for purging for engaging a selective one of the first drain for purging material from the first bank of vials and the second drain to purge material from the second bank of vials. For at least these reasons, the independent Claim 35 is allowable over the teachings of Hill.

Claims 36-40 are all dependent on the independent Claim 35. As described above, the independent Claim 35 is allowable over the teachings of Hill. Accordingly, the Claims 36-40 are all also allowable as being dependent on an allowable base claim.

The independent Claim 41 is directed to a purging system configured to use with a synthesizer, the synthesizer including a first bank of vials having a first drain and a second bank of vials having a second drain. The purging system of Claim 41 comprises a pressurizing system to generate a pressure differential within a selective one of the first bank of vials and the second bank of vials, a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials and a drain seal coupled to the first waste tube for generating a flexible seal between the first waste tube and the selective one of the first drain and the second drain. As discussed above, Hill does not teach a purging system configured to use with a synthesizer. As also discussed above, Hill does not teach a system which includes a first and second bank of vials. Further, Hill does not teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. Hill also does not teach a drain seal coupled to the first waste tube for generating a flexible seal between the first waste tube and the selective one of the first drain and the second drain. For at least these reasons, the independent Claim 41 is allowable over the teachings of Hill.

Claim 42 is dependent on the independent Claim 41. As described above, the independent Claim 41 is allowable over the teachings of Hill. Accordingly, the Claim 42 is also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 24, 35 and 40 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,424,038 to Benz et al. (hereinafter "Benz et al"). The applicants respectfully disagree. Benz et al teach a specimen collector. The arrangement of Benz et al. has a plurality of receiving vessels each formed as a closed cell provided with a first conduit open below and a second conduit open above into an interior of the cell. [Benz et al., Abstract] Benz et al. teach that the arrangement includes two pairs of connecting conduits and a mechanical switching device that has three positions for each group of the cells to close the first and second conduits, connect the first and second conduits with the first pair of connecting conduits and connect the first and second conduits with the second pair of connecting conduits. [Benz et al., Abstract] Benz et al. do not teach a purging system for use with a synthesizer. Benz et al. do not teach a system which includes a first and second bank of vials. Benz et al. do not teach a waste tube capable of engaging with a first drain and a second drain. The connecting conduits of Benz et al. are not waste tubes and do not engage a drain to purge material from a bank of vials.

In contrast to the teachings of Benz et al., the multi-well rotary synthesizer includes a controller, a plurality of precision fit vials circularly arranged in multiple banks on a cartridge, a drain corresponding to each bank of vials, a chamber bowl, a plurality of valves for delivering reagents to selective vials and a waste tube system for purging material from the vials. [Specification, p. 3, lines 8-11] The banks of vials can also be selectively purged, allowing the banks of vials to be used to synthesize different polymer chains. [Specification, p. 3, lines 8-11] The plurality of vials are held within the cartridge and divided among individual banks. [Specification, page 3, lines 15-16] Each individual bank of vials has a corresponding drain. [Specification, page 3, line 16] The reagent solution is purged from a bank of vials by rotating the cartridge until the corresponding drain is positioned above the waste tube system and coupling the waste tube system to the corresponding drain. As discussed above, Benz et al. do not teach a purging system for use with a synthesizer. As also discussed above, Benz et al. do not teach a system which includes a first and second bank of vials. Further, Benz et al. do not teach a waste tube capable of engaging with a first drain and a second drain.

The independent Claim 24 is directed to a purging system configured for use with a synthesizer containing a first bank of vials and a second bank of vials wherein the first bank of vials has a first drain and the second bank of vials has a second drain. The purging system of Claim 24 comprises a pressurizing system for creating a pressure differential within a selective one of the first bank of vials and the second bank of vials and a first waste tube capable of

engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. As discussed above, Benz et al. do not teach a purging system configured for use with a synthesizer. As also discussed above, Benz et al. do not teach a system which includes a first and second bank of vials. Further, Benz et al. do not teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. For at least these reasons, the independent Claim 24 is allowable over the teachings of Benz et al.

The independent Claim 35 is directed to a purging system configured for use with a synthesizer containing a first bank of vials and a second bank of vials wherein the first bank of vials has a first drain and the second bank of vials has a second drain. The purging system of Claim 35 comprises means for generating a pressure differential within a selective one of the first bank of vials and the second bank of vials and means for purging for engaging a selective one of the first drain for purging material from the first bank of vials and the second drain to purge material from the second bank of vials. As discussed above, Benz et al. do not teach a purging system configured for use with a synthesizer. As also discussed above, Benz et al. do not teach a system which includes a first and second bank of vials. Further, Benz et al. do not teach a means for purging for engaging a selective one of the first drain for purging material from the first bank of vials and the second drain to purge material from the second bank of vials. For at least these reasons, the independent Claim 35 is allowable over the teachings of Benz et al.

Claim 40 is dependent on the independent Claim 35. As described above, the independent Claim 35 is allowable over the teachings of Benz et al. Accordingly, the Claim 40 is also allowable as being dependent on an allowable base claim.

Rejections Under 35 U.S.C. § 103

Within the Office Action, Claims 31-41 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,472,672 to Brennan (hereinafter "Brennan") in view of PCT Publication No. 98/10857 to Zuckermann et al. (hereinafter "Zuckermann et al."). The applicants respectfully disagree. Claims 31-34 have previously been canceled.

Brennan teaches an apparatus and method for polymer synthesis using arrays. The apparatus taught by Brennan includes a head assembly having an array of nozzles with each nozzle coupled to a reservoir of liquid reagent. The apparatus taught by Brennan also includes a base assembly having an array of reaction wells arranged in linear rows and columns. Brennan

teaches that the reagent solution is expelled from all of the reaction wells when the pressure differential between the reaction wells and an exit orifice exceeds a predetermined amount. Brennan does not teach a waste tube capable of engaging with a first drain and a second drain. Brennan does not teach a waste tube for engaging a selective one of a first drain and a second drain.

Zuckermann teaches an actuation means for use in solid phase chemical synthesis involving arrays of modular reaction vessels. The apparatus taught by Zuckermann includes a plurality of reaction vessels arranged in a substantially linear array. [Zuckermann, Abstract] The reaction vessels of Zuckermann include modular valving means capable of being simultaneously actuated to drain or close each of the reaction vessels in the array. [Zuckermann, Abstract] Zuckermann does not teach a waste tube capable of engaging with a first drain and a second drain. As described above, Brennan also does not teach a waste tube capable of engaging with a first drain and a second drain. Accordingly, neither Brennan, Zuckermann nor their combination teach a waste tube capable of engaging with a first drain and a second drain. Zuckermann also does not teach a waste tube for engaging a selective one of a first drain and a second drain. As described above, Brennan also does not teach a waste tube for engaging a selective one of a first drain and a second drain. Accordingly, neither Brennan, Zuckermann nor their combination teach a waste tube for engaging a selective one of a first drain and a second drain.

In contrast to the teachings of Brennan and Zuckermann, the multi-well rotary synthesizer includes a controller, a plurality of precision fit vials circularly arranged in multiple banks on a cartridge, a drain corresponding to each bank of vials, a chamber bowl, a plurality of valves for delivering reagents to selective vials and a waste tube system for purging material from the vials. [Specification, p. 3, lines 8-11] The banks of vials can also be selectively purged, allowing the banks of vials to be used to synthesize different polymer chains. [Specification, p. 3, lines 8-11] The plurality of vials are held within the cartridge and divided among individual banks. [Specification, page 3, lines 15-16] Each individual bank of vials has a corresponding drain. [Specification, page 3, line 16] The reagent solution is purged from a bank of vials by rotating the cartridge until the corresponding drain is positioned above the waste tube system and coupling the waste tube system to the corresponding drain. As discussed above, neither Brennan, Zuckermann nor their combination teach a waste tube capable of engaging with a first drain and a second drain. As also discussed above, neither Brennan, Zuckermann nor their combination teach a waste tube for engaging a selective one of a first drain and a second drain.

The independent Claim 35 is directed to a purging system configured for use with a synthesizer containing a first bank of vials and a second bank of vials wherein the first bank of vials has a first drain and the second bank of vials has a second drain. The purging system of Claim 35 comprises means for generating a pressure differential within a selective one of the first bank of vials and the second bank of vials and means for purging for engaging a selective one of the first drain for purging material from the first bank of vials and the second drain to purge material from the second bank of vials. As discussed above, neither Brennan, Zuckermann nor their combination teach means for purging for engaging a selective one of the first drain for purging material from the first bank of vials and the second drain to purge material from the second bank of vials. For at least these reasons, the independent Claim 35 is allowable over the teachings of Brennan, Zuckermann and their combination.

Claims 36-40 are all dependent on the independent Claim 35. As described above, the independent Claim 35 is allowable over the teachings of Brennan, Zuckermann and their combination. Accordingly, the Claims 36-40 are all also allowable as being dependent on an allowable base claim.

The independent Claim 41 is directed to a purging system configured to use with a synthesizer, the synthesizer including a first bank of vials having a first drain and a second bank of vials having a second drain. The purging system of Claim 41 comprises a pressurizing system to generate a pressure differential within a selective one of the first bank of vials and the second bank of vials, a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials and a drain seal coupled to the first waste tube for generating a flexible seal between the first waste tube and the selective one of the first drain and the second drain. As discussed above, neither Brennan, Zuckermann nor their combination teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. For at least these reasons, the independent Claim 41 is allowable over the teachings of Brennan, Zuckermann and their combination.

Within the Office Action, Claims 25, 36, 37, 41 and 42 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hill or Brennan in view of Zuckermann in view of U.S. Patent No. 2,684,255 to Abele et al. (hereinafter "Abele et al.") The applicants respectfully disagree.

Claim 25 is dependent on the independent Claim 24. As described above, the independent Claim 24 is allowable over the teachings of Hill and Benz et al. Accordingly, the Claim 25 is also allowable as being dependent on an allowable base claim.

Claims 36 and 37 are both dependent on the independent Claim 35. As described above, the independent Claim 35 is allowable over the teachings of Brennan, Zuckermann and their combination, Hill and Benz et al. Accordingly, the Claims 36 and 37 are both also allowable as being dependent on an allowable base claim.

As discussed above, neither Brennan, Zuckermann nor their combination nor Hill teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. Abele et al. appears to only be cited for its teaching of a seal. Abele et al. does not teach a drain seal coupled to a waste tube for generating a flexible seal between the waste tube and a drain. Further, there is no hint, teaching or suggestion to combine Abele et al. with either Brennan, Zuckermann or Hill, as neither Brennan, Zuckermann nor Hill has a waste tube that would need a drain seal.

The independent Claim 41 is directed to a purging system configured to use with a synthesizer, the synthesizer including a first bank of vials having a first drain and a second bank of vials having a second drain. The purging system of Claim 41 comprises a pressurizing system to generate a pressure differential within a selective one of the first bank of vials and the second bank of vials, a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials and a drain seal coupled to the first waste tube for generating a flexible seal between the first waste tube and the selective one of the first drain and the second drain. As discussed above, neither Hill, Brennan, Zuckermann, Abele et al. nor their combination teach a first waste tube capable of engaging a selective one of the first drain to purge material from the first bank of vials and the second drain to purge material from the second bank of vials. For at least these reasons, the independent Claim 41 is allowable over the teachings of Hill, Brennan, Zuckermann, Abele et al. and their combination.

Claim 42 is dependent on the independent Claim 41. As described above, the independent Claim 41 is allowable over the teachings of Hill, Brennan, Zuckermann, Abele et al. and their combination. Accordingly, the Claim 42 is also allowable as being dependent on an allowable base claim.

Applicants respectfully submit that the claims, as amended, are now in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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Dated: March 18, 2004

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CERTIFICATE OF MAILING (37 CFR§ 1.8(a))

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

HAVERSTOCK & OWENS LLP

Date: 3-18-04 By: Nicole Rodriguez